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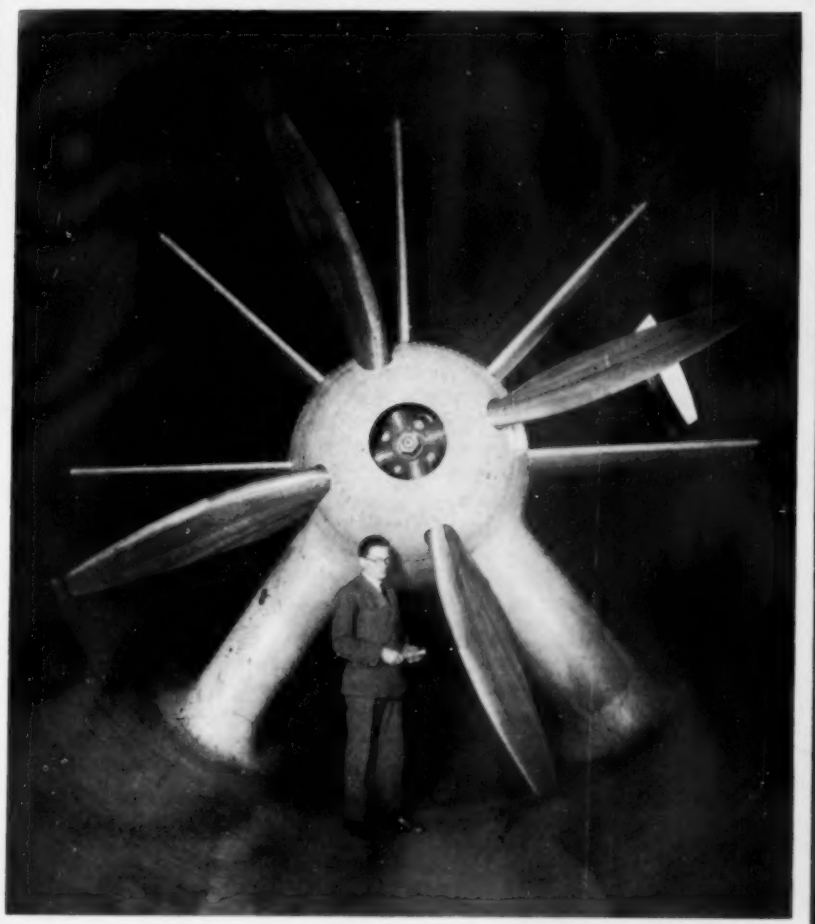
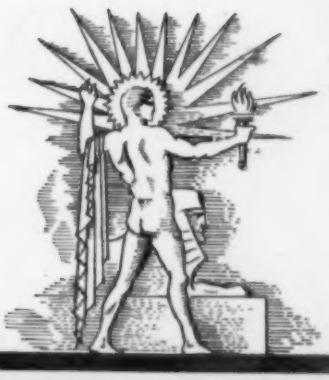
SCIENCE NEWS LETTER

THE WEEKLY SUMMARY OF CURRENT SCIENCE •





MAY 16, 1931

Source of Four Mile-a-Minute Storm

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A SCIENCE SERVICE PUBLICATION

SCIENCE NEWS LETTER

VOL. XIX *No. 527*

The Weekly Summary of Current Science

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The Institution for the Popularization of Science organized under the auspices of the National Academy of Sciences, the National Research Council and the American Association for the Advancement of Science.

Edited by WATSON DAVIS

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• DO YOU KNOW THAT •

There is no foundation for the belief that soaking or boiling poisonous mushrooms in salt water will make them harmless to eat.

Homing pigeons were used by the Roman army to carry messages in wartime at least as far back as 43 B. C.

Nebraska is using radio programs regularly to broadcast singing lessons to children in rural schools of the state.

Iroquois Indians held a thanksgiving ceremony when the strawberries ripened, because of their appreciation of this first fruit of the year.

Bay trees of the Virgin Islands yield an oil which might be in considerable demand in world trade if extracted by modern methods.

Many people who avoid eating strawberries because of high acidity could eat the milder flavored varieties, the U. S. Department of Agriculture points out.

"Monster" pictures of insect pests are being sent out to farming districts, under the auspices of the U. S. Department of Agriculture, in order to aid the farmers in identifying these public enemies.

Recent experiments indicate that babies under six months of age do not show interest in colors.

An automatic device that keeps count of the words written on a typewriter has been invented.

The homicide death rate in American cities is about 10 per 100,000 of population, as contrasted with about 0.5 per 100,000 in England and Wales.

To remove a crust of silicate deposits from a rare antique vase, an expert at the Boston Museum of Fine Arts risked firing the vase at 450 degrees heat, almost the melting point of the glazes; but this removed the deposit, revealing the design.

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BOY OR GIRL?

By Dr. Robert T. Hance, professor of zoology at the University of Pittsburgh, investigator of the cellular mechanism of heredity and sex determination.

Friday, May 22, at 2:45 P. M., Eastern Standard Time

Over Stations of

The Columbia Broadcasting System

CHEMISTRY

Last Missing Element Detected By New Method of Analysis

Four Alabama Scientists Find Element Number 85 With Analysis That Recognizes One Part in Hundred Billion

THE ONE remaining unknown chemical element, number 85, has been detected for a first time in seawater, in potassium bromide, a common headache drug, and in a number of well-known minerals by a method of super chemical analysis so delicate that it can recognize one part in a hundred billion of water.

The discovery is announced by Dr. Fred Allison, Edgar J. Murphy, Prof. Edna R. Bishop and Anna L. Sommer, working at the Alabama Polytechnic Institute, Auburn. Two of these, Dr. Allison and Mr. Murphy, are the same scientists who a year ago discovered the next to the last unknown element, number 87, next door neighbor to radium in the chemist's table of the ultimate building blocks of matter.

Ninety-two elements now form the completed list.

The new element, eighty-fifth when the elements are arranged in the order of the weights of their atoms, is a family relative of iodine, long popular as an antiseptic. It has not yet been separated, for only one part in a billion is present in the substances examined.

However, in their letter to the *Physical Review*, in which the announcement is made, the discoverers say that concentration of a purer form of the element from monazite sand is being attempted and is making good progress. The "eka-iodine," as Mendeleeff would have called it in his original periodic table, is being separated as the "85-ite" of lithium. Monazite sand is well known as the source of the cerium and thorium used for the mantles of Welsbach gas burners.

Other materials in which number 85 has been found are: kainite, a potassium magnesium sulphate found in the famous German Stassfurt salt deposits, apatite, which is a fluoride and phosphate of calcium and barium, and fluorite, or calcium fluoride, as well as in the laboratory reagents hydrofluoric and hydrobromic acids.

The new method of analysis depends on a strange phenomenon discovered a long time ago by Michael Faraday, one of the greatest scientists of all time. The Faraday effect has to do with what happens to a beam of light passing through a transparent substance placed between the north and south poles of a powerful magnet. The vibrations of the light beam, if polarised, that is, confined to one direction to start with, are found to have rotated on passing through the magnetised liquid.

About a billionth of a second elapses after switching on the magnet before the influence on the light vibrations is observed in the liquid. This lag is found by Dr. Allison and his associates to be different for different substances. It is this delay that gives a means of identifying extremely small amounts of substances and in particular the first traces of the new chemical element 85. Because of its small amount the lag was not discovered until a year or two ago when Dr. Allison invented his new method of measuring it.

America seems to be making up for lost time in discovering the missing members of the chemical family. Until the discovery of illinium by Prof. B. S. Hopkins at the University of Illinois in 1926 no element had first shown itself to an American investigator. Illinium's discovery left only two more elements to be discovered in order to complete the chemical periodic table.

If the discovery of element 85 is confirmed by other investigators, the United States will have the distinction of having found the three last and therefore the most inaccessible of all the elements.

Six elements have been discovered in the last seven years. Number 72, called hafnium after the city of Copenhagen, was discovered in 1923 by Prof. D. Coster and Dr. Georg Hevesy. Numbers 43 and 75 were isolated in 1925 and 1926 at the University of Berlin by Dr. Walter Noddack and his collaborators and named masurium and rhenium.

Science News Letter, May 16, 1931

CONSERVATION-ZOOLOGY

Australia Arousd to Preserve Wild Life

AUSTRALIA, which has had a development more or less analogous to that of the American West, is now passing through a phase also experienced in America—the realization that reckless slaughter is threatening extermination of many of its unique animal

ALMOST UNKNOWN IN ZOOS

The Thylacine, or "marsupial wolf", was formerly represented in the U. S. Zoological Park in Washington by two specimens. This animal, though a beast of prey, is now protected by the government of Tasmania.

species. This is resulting in activities looking toward their protection and preservation.

The koala or "native bear," an animal looking more or less like a bear but really a marsupial related to the kangaroo and the opossum, is an object of special solicitude. In New South Wales and other regions where it has been exterminated, efforts are being made to reintroduce it.

The so-called marsupial wolf or thylacine, not so harmless and good-natured as the koala, has been mercilessly hunted and now survives only in northwest Tasmania. The government of Tasmania has lately taken steps to protect the survivors of the species, and now forbids the exportation of thylacine pelts.

The Australian opossum is another animal that is being over-hunted. In the state of Victoria alone, which has a three-month open season, at least one million are killed annually, and conservationists are becoming concerned lest the fur trade destroy itself through its own over-eagerness for profits. New South Wales is the only state where the opossum is given official protection.

Although there are laws on the books to protect the native animal and plant life of Australia and Tasmania, there are not enough rangers in service to secure proper enforcement. However, voluntary assistance of interested persons is now being enlisted; and there is a movement on foot to establish nature sanctuaries and parks.

Science News Letter, May 16, 1931

GENETICS

Two-Sexed Corn Strain Obtained By Breeding

CORN PLANTS with male and female flowers on separate individuals instead of in tassel and ear on the same stalk, as in ordinary corn, have been obtained as the result of breeding experiments by Dr. Donald F. Jones of the Connecticut Agricultural Experiment Station. Dr. Jones started with two strains of corn, one of them with silkless, and therefore sterile ears, where the female flowers are borne; the other with the tassels unable to produce the fertilizing pollen. By means of breeding procedure he has been able to make these characters permanent, changing an hermaphrodite or double-sexed organism into a dioecious or single-sexed organism.

Dr. Jones' report appeared in *Science*.

Science News Letter, May 16, 1931

AERONAUTICS

Four Mile Per Minute Wind Possible in New Tunnel

Air Speed in New Apparatus at Guggenheim Aeronautical Laboratory, Pasadena, Exceeds Hope of Designers

AN ARTIFICIAL windstorm blowing 240 miles per hour has been found possible in the remarkable wind tunnel recently constructed at Pasadena for the California Institute of Technology. The outfit is a feature of the new Guggenheim Aeronautical Laboratory. This velocity exceeds the original hopes of the designers.

A wind tunnel enables airplane investigators to reverse the conditions of normal flying with obvious experimental convenience. One simply runs the air past a stationary plane instead of running the plane through stationary air.

The Pasadena tunnel might be likened to a huge reinforced concrete doughnut, flattened to an oval contour and set on edge. The aeronautical laboratory itself is built around the tunnel. The "doughnut" is of course hollow, and varies from ten to twenty feet in cross section. A striking view of the interior of the tunnel and of the huge fan that drives air through it is shown on the front cover. At this point the tunnel is fifteen feet in diameter.

A large direct current motor, mounted in the lower run of the tunnel, delivers 750 horsepower to a propeller. Air is driven in an endless circle to the upper level, where tests are made, and return. A section about thirty-five feet in length along the upper level is accessible to airplane parts and instruments. The investigator watches the hurricane through a curved window.

The apparatus was designed by Prof. Harry Bateman and Prof. Clark Millikan, in consultation with the European expert, Theodor von Karman. The latter has become director of aeronautical research activities at the Institute.

The air in motion is not seriously retarded by the tunnel walls. Upon its return to the motor after the first round trip it is again accelerated, and its velocity mounts until 200 miles is reached or even exceeded. The smooth interior finish, and polished curved steel baffles on the corners, permit the air to sneak around turns like a snake, without getting stirred up.

In practice the speed is held down to 200 miles to avoid undue strain. Even then the air becomes hot from friction without thermal relief. Velocity tests at numerous places show that the rate is uniform, not varying as much as two per cent. from place to place across the stream. This permits accurate tests of air pressure against airplane wings, fuselages, etc.

Since 200 miles per hour exceeds common flying speeds, the Pasadena experts are enabled to work with small models which can be gotten into the tunnel. It is then practicable to calculate reasonably what a real airplane, which is larger, will do with a proportionally smaller velocity.

Science News Letter, May 16, 1931

PUBLIC HEALTH

Fluorine in Water Causes Spotted Teeth

WHAT IS believed to be definite proof that mottled and corroded teeth in Arizona are caused by the existence of fluorine in drinking water has been announced by Dr. Margaret Cammack Smith, nutrition chemist of the University of Arizona.

Mottled teeth, an endemic developmental imperfection of the enamel of the teeth, first came to the attention of leading dentists in America in 1906. The existence of communities suffering from a disease of the teeth has long been known but a thorough study was not made until 1916.

Dr. Smith has worked out experiments with white rats and dogs in securing her results. Samples of water from the affected areas revealed abnormal amounts of fluorine in combination with some other substance, usually calcium. This calcium fluoride was found to act on the teeth of children before the teeth erupt. The sulphuric acid test revealed hydrofluoric acid in all of the tests and successfully etched glass.

However, in Dr. Smith's opinion not all of the disease is traced directly to

fluorine. She believes that the condition is in addition caused by unfavorable nutrition. Dr. Smith, assisted by Miss Edith Lantz, research assistant in nutrition at the university, received accurate results in working with animals and secured mottled teeth in animals given the water with fluorine content.

Recent experiments conducted in other parts of the United States reveal that fluorine is also present in other districts where mottled teeth are prevalent.

Science News Letter, May 16, 1931

PSYCHOLOGY

Temperament and Health Possibly Correlated

CERTAIN physical makeups are associated with certain types of temperament, it is indicated by a report made last week to the Association of Consulting Psychologists by Drs. L. P. Herrington and W. R. Miles.

Of a group of 550 Stanford University men, it was found that those classed by psychologists as introverts, or having a self-centered personality, had less athletic ability, had required more medical service, and had undergone more major surgical operations.

The investigation was made by Dr. Herrington at Stanford, under the direction of Dr. Miles, who was then at Stanford, but now spending his sabbatical leave at Yale's Institute of Human Relations.

Science News Letter, May 16, 1931

PHYSICS

Michelson's Last Experiment To be Finished by Associates

While on Death Bed Famous Scientist Dictates Outline of Paper to Announce Most Precise Value of Speed of Light

DR. ALBERT A. MICHELSON'S last and most accurate measurement of the velocity of light, interrupted by his death, will be completed. His associates, Dr. Francis G. Pease of Mt. Wilson Observatory and Dr. Fred Pearson, who was Dr. Michelson's assistant for twenty years, will finish the experiment, still in progress, as originally planned by Dr. Michelson. But the world's most precise determination of the speed of light had progressed sufficiently far before Dr. Michelson's death to allow him and his associates to arrive at a tentative value.

"The tentative value for the velocity of light resulting from this experiment is about the same as that obtained by Dr. Michelson's experiment on Mt. Wilson," Dr. Pease has informed Science Service.

Just four days before his death, Dr. Michelson dictated from his sickbed the outline of the scientific paper which will eventually announce to the scientific world the most precise value of light's velocity, one of the most fundamental values in physics.

The mile-long tube in which the present light experiments are performed is located on Irvine Ranch, near Santa Ana, south of Pasadena. In erecting this unique laboratory, Dr. Michelson had the cooperation and support of the Mt. Wilson Observatory of the Carnegie Institution.

The long tube in which the tests are made cost $50,000 and took two years to complete. Its length was accurately measured by experts of the U. S. Coast and Geodetic Survey with an accuracy of one part in a million. It is three feet in diameter and its welded construction made it possible to exhaust practically all of the air within it. To exhaust the thousands of cubic feet of air in the pipe, vacuum pumps are run day and night. Only 125 cubic feet of air, measured on the basis of ordinary atmospheric pressure, are left in the tube during the tests.

The Michelson tube gives science's first opportunity here on earth for measuring light's velocity in vacuo, approximately the condition to which it is subjected as it speeds through outer space. Dr. Michelson's previous light velocity measurements were made by sending a beam of light from a distant mountain peak to a revolving mirror on Mt. Wilson, where the famous Carnegie Institution observatory and world's largest telescope are located.

The 1926 experiments on light traveling twenty-two miles from Mt. San Antonio to Mt. Wilson gave a light velocity of 299,796 kilometers per second, or 186,290 miles per second. This is believed to be accurate to within 4 kilometers per second or about three miles per second. So precisely will the velocity of light be known when the present experiments are completed that it will be possible to use the speed of light as a measuring stick in precise surveying.

Dr. Michelson made his first experiments on the velocity of light shortly after he finished his studies at Annapolis and while he was still in the Navy.

Science News Letter, May 16, 1931

ATTACKING THE AIR WITH PICK AND SHOVEL

The 250 tons of urea shown in this picture, the largest store in the world, at Oppau, Germany, is made in part from the nitrogen of the air. The huge mass suggests the great scale of modern industrial chemical operations. Unbreakable porcelain will shortly be made from a compound of urea and formaldehyde. A plastic material is first formed by the action of formaldehyde on urea, and this can be pressed hot into any desired form.

PSYCHOLOGY

Promise of Genius in Children Revealed by Simple Tests

Psychologist Works Out Picture and Block Games That Show Youthful Appreciation of Art

By MARJORIE VAN DE WATER

WOULD YOU think of asking young Betty Jane, aged two, how she likes the arrangement of the living room furniture? Or consulting with Bobby, who is not quite four, as to where he would plant the lilacs if he were "landscaping" the garden?

Probably not, for most parents and other elders have heretofore regarded artistic taste as a much later development in the life of the child. Now, however, psychologists searching for the beginnings of artistic talent, have discovered that long before the child is old enough to go to school he is able, if given the opportunity, to show an appreciation of beautiful color combinations, of correctly balanced composition, and of various other elements of art.

And he can also, consciously or unconsciously, make use of artistic principles in his own creative work—whether it be drawings, modeling in clay or the more every-day ways of dressing a doll, arranging the furniture in a doll house or choosing a particular necktie or hair ribbon. He can, that is, if he is gifted with artistic talent.

Some day it may be possible for the parent or teacher of a child to give him a series of tests and learn what his chances are of developing into an artist if given the proper training.

At the University of Iowa, a group of psychologists are just completing the first two years of a seven-year investigation of the genesis of art talent. One of the most interesting facts so far discovered in the course of the study is the surprising variation that exists among different children as early as the fifth or sixth year, both in their interest in artistic objects, and in their own creations of an artistic nature.

Dr. Norman C. Meier, who is in charge of the investigation, has already reached the conclusion that conditions in the child's first seven years determine roughly whether any amount of future training, study, ambition, or exhortation can make of him an artist.

His artistic capacity depends partly upon the equipment with which the child comes into the world. The potential artist has well developed senses which allow him to see and feel the beauty in the world around him. He must be physically able to distinguish colors and forms in nature. And he must have also a well-developed central nervous system that will enable him to respond to whatever he sees and hears and feels.

What Makes the Artist

Dr. Meier believes, however, that this is only part of the story. The proper development of the senses and nervous system are essential to the artist, but it is not this that sets him apart from other children. Any intelligent child grows in this fashion. What is it then that makes the artist?

It is the answer to this question that is being sought in the psychological laboratory at Iowa University. From what has been discovered in these first two years of the investigation, Dr. Meier concludes that the development of a special "aesthetic intelligence" depends not only upon endowment by nature, but upon the child's environment in his infancy and early childhood.

"If the child's attention is drawn very early to nature with its infinite variety of forms, this child will be looking for form in almost everything he handles", Dr. Meier says. "He will not eat his popcorn as quickly as his equally intelligent companion will, but rather mull over it, finding starfish, triangles, butterflies and other suggested forms. Hence, his imagination will be richer, his desire to express his new ideas and concepts more frequent—and his artistic products will reflect this."

Many children, and grown-ups too for that matter, walk about without a thought of the sights and sounds that are passing them by.

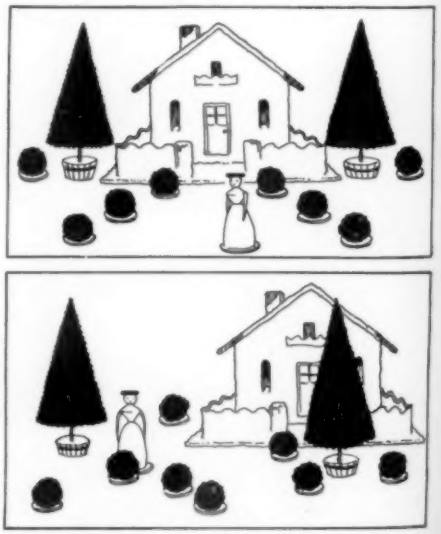
If the child is taught really to see whatever his eyes fall upon, he will notice many things in nature that are balanced, symmetrical, rhythmical and harmonious, and will learn to gain pleasure from such things when he meets them. It is very likely that he will come across more balanced arrangements than unbalanced, more harmonious than unharmonious, so that in time he will come to expect to see the beautiful and will regard it as the natural, normal thing.

Then, Dr. Meier says, the bases of artistic capacity may be considered to have been established.

And this foundation is laid much earlier than has been supposed. As a preliminary to their study, the scientists asked competent judges of art to study a collection of over one thousand artistic efforts of little children under school age. These were mostly paintings in one to four colors and were made by the children entirely without direction from anyone else. The art authorities analyzed them to find out how much design or to what extent art principles were to be found.

Two out of every three of the paintings were declared by the judges to have some definite artistic merit! Children as young as four years of age can and commonly do produce artistic drawings and paintings when given the proper opportunity.

Some of these early attempts at drawing are a great annoyance to parents, especially when the space selected for the work is the nice smooth light cream-



THE CHILD'S SENSE OF FITNESS

or the fact that he has none at all may be shown by the way a child arranges this doll garden. The one who places the shrubs in as orderly and as balanced an arrangement as they are in the upper picture has a feeling for artistic principles which the lad who fixes them as they are below lacks.

DR. NORMAN C. MEIER

He says that conditions in the child's first seven years settle the question of artistic ability or lack of it.

colored wall on the south side of the living room. Yet there have been parents who actually encouraged this outrage of properties with interesting results.

The family was a somewhat large one and all the children were fond of drawing. Paper and pencils were scarce, so the younger ones were allowed to draw with burnt sticks on the walls of a long passage. The littlest lad, Joshua, did not do so well as the others, but when he was 8 he drew a picture of his school which his father told him was "wonderful." Years later, the King of England knighted him for his artistic accomplishment, and Sir Joshua Reynolds became a justly famous painter.

If you have a small child in your family or acquaintance, you are probably wondering how you can detect the germ of art talent in its small beginnings. It will not do, of course, to wheel the baby carriage down to the art museum with the idea of securing his judgment on the paintings there. Even if the child were able to distinguish between the different works of art, he would have no language with which to express what he saw.

There is another approach to the problem, however, which Dr. Meier has followed. This is in watching the child at his own play. Every child loves to build with blocks. Does any pattern suit him? Is he satisfied with making a haphazard pile or jumble of his blocks? Or does he create in orderly fashion, making a balanced, harmonious construction? Does he apparently follow some definite plan which he has in his own mind?

Seeking the answer to these questions, and at the same time a basis for comparing a group of children, Parmely Daniels, one of the psychologists working with Dr. Meier, used the following procedure. Each child was shown two ready-constructed designs built of blocks. One of the designs was in balance and the other was not. The child was simply told to "build something like one of those."

Some children copy the balanced design from one set, but later choose the unbalanced from another pair. But others, Mr. Daniels found, invariably copy only the balanced pattern. When questioned later this latter group also say that they like the balanced construction better. They may not realize why they make their choice, but the fact that they are consistent shows that they are able to make a distinction between the artistic and unartistic.

Test of Rhythm

And here is another test of art for little tots. This time the psychologist wanted to measure the child's ability to recognize the artistic principle of rhythm. Constance Jasper designed the test, which consisted of a series of border designs like those sometimes used around the walls of nurseries. In one the design consists of a repetition of the figure of a rabbit. The rabbits all appear to be running in one direction, but one space is left blank. The child is given four different figures of rabbits and told to put one of them in the blank space to finish the design. Only one of the figures carries on the movement in the design.

This test was given to children as young as two years old, but at that age and up until four there was very little success. From four to six, children seem to increase greatly in this ability. Some of these in the first grade had almost perfect scores.

A more natural situation was used as a measure of the color sense of children still in the kindergarten or nursery age. Practically every child, even a small boy, loves to dress dolls. Eileen Williams, the assistant who conducted the research on this particular phase of the art-testing problem made doll dressing into a test.

She had the doll already dressed in a pretty china silk dress, dyed an attractive color. The child was then given the doll and also four scarfs, one of which might be chosen to finish the dressing of the doll. All four scarfs were dyed in pretty colors, but only one harmonized with the color of the dress already on the doll. If the child consistently chose the harmonizing color on three different trials, she was given credit for passing.

The test results brought out the fact that color sense develops in general at about the fourth or fifth year.

Perhaps the most interesting of the tests is one which is just now being developed by K. Snow in the same laboratory. The materials for this are miniature houses, trees, bird baths and other ingredients for making a landscape, all in clay. The child "plants" the trees, grouping them in any way he likes. To make clear to him what he is to do, he is shown photographs of several possible plantings. The arrangement selected indicates his appreciation of artistic unity and fitness.

This test is still in the experimental stage and has not been given to many children, but already it has demonstrated the fact that some children are able to make use of artistic principles even though they are probably much too young to analyze or understand them.

(This article was edited from manuscript prepared by Science Service for use in illustrated newspaper magazines. Copyright, 1931, by EveryWeek Magazine and Science Service.)

Science News Letter, May 16, 1931

A GAME TO TEST THE CHILD'S SENSE OF RHYTHM

The one who places bunny No. 2 in the empty space in the top border is more apt to make an artist.

PHYSIOLOGY

Frogs and Turtles Deaf to High Tones

BULLFROGS and turtles are unable to respond to human speech or other high tones as do mammals but they can hear only deep sounds like the low croak of the bullfrog himself, Drs. E. G. Wever and C. W. Bray of Princeton have reported to the New York branch of the American Psychological Association. This high tone-deafness of reptiles and amphibians was discovered in the course of a series of experiments which the scientists have been conducting to determine by what process hearing is made possible.

The nerve current carried by the auditory nerve is similar in general character to the sounds stimulating the ear of the animal, it was indicated by the experiments. Impulses initiated by speaking into the ear of the frog made the speech audible, after amplification, in a telephone receiver hooked up to the auditory nerve. It did not sound like speech, however, but merely like a buzz. For the turtles, the speech could not be understood but was clearly distinguishable as someone talking. The impulses when amplified about 800,000 times can actually be measured by a cathode ray tube measuring device for electrical current, Dr. Wever found.

Science News Letter, May 16, 1931

PSYCHOLOGY

Early Training May Cause Mental Disorders in Children

THE EARLY training of children was cited as one of the causes of mental disorders by Dr. Mandel Sherman, of the Washington Child Research Center, Washington, D. C., in a report to the Ohio State Educational Conference,

"The not uncommon development in a child of the attitude that he is the center of importance, is an example of the way in which an early mental habit results later on in behavior which is considered abnormal," Dr. Sherman said.

"Such a child has the greatest difficulty in adjusting himself to other people for he finds that others outside the home do not and cannot take the same attitude towards him as his parents. He is no longer the center of attention, he is no longer the point around which the activities of the others revolve. As a result he must either retire from social contacts or he must develop the attitude that others are being more unfair to him than to everyone else.

"The newer system of education which begins with the pre-school child may be a solution to many of the problems of emotional and mental disturbances. If the plans of some of the child development institutions are carried out it will mean the beginning of education into the ways of the world at a very early age. Children will not be protected in the home because the longer reality is kept from a child the more difficult will be his adjustment to it. . . . If we are to throw children into a complex unfriendly world we must also train them very early in life to be able to adjust to the conditions which they are likely to meet."

Science News Letter, May 16, 1931

PHYSIOLOGY

Good-Nature of Fat People Explained Biologically

THE PROVERBIAL good-nature of fat people was given biological explanation by Dr. Harold E. Himwich and Dr. J. A. Fulton of Yale University at the recent meeting of the Federation of American Societies for Experimental Biology.

Placid and good-natured people, who take life easily and do not get excited do not burn up much fat. Instead, it is stored in their bodies just under the skin and over the abdominal areas.

"Last June it was found that injections of adrenalin raised the blood fat," Dr. Himwich stated. "Since it is known that adrenalin is liberated in emotional stress, we set out to determine the blood fat content during fear and rage.

"A cat in a small cage was placed in front of a large dog. The dog tried to get at the cat and, being prevented by the cage, became more and more enraged. The cat inside the cage became more and more frightened. A sample of the blood of both animals was procured both before and after.

"We found that the fat content of the blood rose rapidly during the development of emotional states in both dog and cat. Hence it seems probable that the tissues of the body are afforded increased amounts of fat to supply energy for the exigencies of the moment. The amount of fat consumed seems to be the same for both emotions."

Science News Letter, May 16, 1931

IN SCIENCE

PSYCHOLOGY

Folks Keep Time To Jazz More Than To March Time

THE SOUND of music, especially that with pronounced rhythm, will cause most people to move or sway if not actually to beat time. That there is a wide variation in the amount of this movement dependent upon individual differences and upon the type of music was shown by experiments conducted at the University of Wisconsin, and reported in Chicago at the meeting of the Midwestern Psychological Association by Dr. Richard W. Husband and Maxine Brostrom.

The 84 persons studied listened to the various types of music while standing on an ataxiameter, an instrument which records the sway of the body forward and backward and also to the right and left.

Jazz, as might be expected, caused the greatest amount of movement, but march time, commonly thought to set nearly every man's feet to pounding, actually produced the least movement in men. For women, the type of music producing least swaying was symphony music. Waltz time produced the second highest amount of movement.

Science News Letter, May 16, 1931

MEDICINE

Creeping Paralysis Virus Discovery Not Accepted

THE DISCOVERY of a virus reported to be the cause of creeping paralysis or multiple sclerosis by Kathleen Chevassut and Sir James Purves-Stewart of Westminster Hospital is not accepted by the leading medical research workers and clinicians in London, Dr. W. L. Holman, professor of bacteriology at the University of Toronto, has declared.

Dr. Holman has recently returned from England where he investigated the work of Miss Chevassut. He does not believe the evidence justifies the statement that the causative agent of this baffling disease has been discovered.

Science News Letter, May 16, 1931

NCE FIELDS

METEOROLOGY

Another Drought Due Old Records Indicate

WILL there be another drought in the summer of 1931?

This question is raised by a study of weather sequences in Baltimore during the past 113 years, made by John R. Weeks, Maryland state meteorologist, and reported in the Bulletin of the American Meteorological Society.

Mr. Weeks summarizes his results as follows:

"Rule, assuming as a normal the average from 1871 to 1929, which is 12.77 inches, a summer with rainfall less than seven inches at Baltimore is followed the next year by a summer with rainfall less than normal ten times out of eleven. Three times out of four the rainfall the next summer is three inches or more below the normal. Six times out of eleven it is five inches or more below the normal. The driest summer, 1869, was followed by a very hot summer with rainfall less than half the normal."

Science News Letter, May 16, 1931

PHYSIOLOGY

Excess Fat of Body Changed Into Sugar

IF YOU eat too much fat and not enough sugar, will your body automatically transform some of the excess fat into carbohydrate fuel food? Dr. John R. Murlin of the University of Rochester has suggested that the versatile human body thus answers its own demands for proper food by manufacturing the needed sort even if it does not get just the right raw materials.

Volunteers lived on a diet of pure cream for five days in the experiments reported to the Federation of American Societies for Experimental Biology by Dr. Murlin and Miss Estelle E. Hawley, his associate. Each morning and evening they were fed their meals of cream and then they were put through tests to ascertain how the body used this unbalanced food ration. One brave temporary martyr to science remained in an ice box for an hour and a half in order to test his metabolism on the fat diet under the influence of reduced temperature. He shivered for an hour during this experience.

Sufferers from diabetes seem to be able to eat fat without filling their blood with sugar that is dangerous to them. This has caused physiologists to believe that the body could not manufacture sugar or other carbohydrates from fatty foods.

Physicians have recognized heretofore that sugars could be converted into fat by the body and they have repeatedly warned pleasingly plump people against eating too much sugar and starches. Now, if Dr. Murlin's experiments are further confirmed, they can feed their obese patients high fat diets in necessary cases with the assurance that the body will look out for itself and make the sugar it needs to supply energy.

Science News Letter, May 16, 1931

ORNITHOLOGY

Malau Bird Hatches Eggs By Natural Heat

A BIRD that displays something of the languor of the tropics is described by Dr. T. A. Jaggar, director of the Hawaiian Volcano Observatory. Evidently finding sitting on its eggs too exacting, the malau bird, a unique inhabitant of Niuafou, one of the Tonga Islands, digs a hole three to five feet deep in the slope of the warm volcanic sand, lays her long, pink egg in the bottom, scratches her way out, filling the hole behind her with sand, and lets nature do the rest.

The sun heats the sand to from 85 to 95 degrees Fahrenheit. If the natives do not molest the egg and it is allowed to hatch, the young bird digs its own way out. The egg is the size of that of a goose. In another effort to save labor, different hens reoccupy the same holes over and over.

The malau bird is a small bush hen of the genus *Megapodius*, which has another representative in Australia. The zoological name means "big-foot."

The malau has large yellow legs with claws adapted for digging. It is about the size of a small Leghorn hen, with a black body and small, scrawny head. Its whistle resembles that of the quail.

The particular habitat of the malau hen is the ironwoods and other growth, especially in those places where the afternoon sun heats the sand hills made in 1886 by a volcanic explosion.

Science News Letter, May 16, 1931

REFRIGERATION

Paper and Air Suggested As Ice Box Insulation

SHEETS of paper with a one-tenth inch air space between them may make a more satisfactory insulating material for the walls of ice boxes than the solid board materials now commonly used, it is indicated in a report to the American Society of Refrigerating Engineers meeting in Kansas City by J. L. Knight of the General Electric Company.

The ideal insulating material would be nothing but air, if it transmitted heat by conduction alone, that is, the same way one end of a metal rod gets hot when the other end is heated, according to Mr. Knight's report, for the pure conductivity of air is much less than that of any commercial insulant now known.

"Unfortunately," it was stated, "radiation and convection may transmit several times as much heat as conduction, so that the net insulating effect is poor."

Science News Letter, May 16, 1931

ARCHAEOLOGY

To Search For America's Oldest Arctic Inhabitants

THE SEARCH for America's oldest Arctic inhabitants is about to take two young archaeologists to the most northern point on the American continent. Arriving at Point Barrow, about five degrees north of the Arctic Circle, they will spend the brief summer season digging into frozen ground at sites where prehistoric Eskimos are known to have had settlements.

The two young men, James A. Ford and Moreau B. Chambers, both of Mississippi, are to conduct the expedition for the U. S. National Museum. Even by making closest possible boat connections, they will have only about a month at Point Barrow, before they must catch the last boat out or be blockaded in for the winter.

Point Barrow is regarded by scientists of the National Museum as a highly strategic point in American archaeology. Most American archaeologists hold that the first people who ever migrated into America must have come by way of Bering Strait, and that traces of their settlements, if any remain, will be discovered somewhere along the coast of the region.

Science News Letter, May 16, 1931

CHEMISTRY

The First of The Rare Earths

"A Classic of Science"

The Discovery of Yttrium Introduced Chemists to a Puzzling Group of Closely Related Chemical Elements

FERNERE UNTERSUCHUNGEN DER SCHWARZEN STEINART VON YTTERBY UND DER IN DERSELBEN GEFUNDENEN EIGENTHUMLICHEN ERDE. (*Further Investigation of the Black Mineral from Ytterby and the Peculiar Earth found in it*). *By A. G. Edeberg. In Chemische Annalen* (*Crell*). *Helmstädt* (*Germany*), 1799. *Translated for the* SCIENCE NEWS LETTER *by Helen M. Davis.*

PROF. GADOLIN, in the Transactions of the Royal Academy of Science (Stockholm) for the year 1794, second quarter, has described an investigation of a black mineral from the Ytterby quarries in Rosslagen, and at the same time the announcement of the chemical analysis by which he accomplished the discovery of a new and hitherto unknown earth. It seemed necessary to determine the properties of this earth, in order to decide upon its identity and its differences from those already known. Yet with the caution which only older and more experienced analysts have, it was given a place as a true earth, without any reservation or more exact knowledge. Upon getting the opportunity, I have also subjected this material to analysis, and there seems to me no longer any doubt that it should have this place.

Captain Arrhenius, whose enthusiasm for science gave Prof. Gadolin the opportunity to investigate this material, is also the one who has put me in the way of being a collaborator in the discovery. Such a beautiful piece of the mineral was sent me by him that after breaking it up I could select little pieces free from feldspar for analysis. Since Prof. Gadolin did not have this advantage, the proportion of constituents in my determination must naturally be somewhat different from that given by him. For it is clear, that the included feldspar would increase the percentage of silica and alumina, at the expense of the other substances.

Upon a weighed sample of the mineral was poured 16 times as much pure muriatic acid, and the mixture was held at gentle ebullition until the soluble part was extracted, and the clay remained as a white, cheesy mass. After drying and ignition, this weighed 25 parts, and with soda gave a glass bead before the blowpipe, which remained clear upon cooling.

From the filtered solution, which appeared lemon yellow in the cold and bright green when warm, there was precipitated with caustic sal volatile (ammonium carbonate) a dirty-brownish earth. After this was separated by filtration, the liquid gave no precipitate with carbonated sal volatile, and yielded upon evaporation pure sal ammoniac (ammonium chloride). The reserved dirty precipitate, while still moist, was put into a caustic potash solution and heated with it for some time, when the insoluble part was separated.

The potash-soluble part was saturated with nitric acid, which made it turbid, but it was cleared again by an excess of acid. It was then precipitated with carbonated sal volatile, and the alumina thus obtained weighed, after ignition, only 4½ parts.

What was left from the potash solution was dissolved in dilute sulphuric acid. After evaporation to dryness, the residue was strongly ignited, until it had taken on a red color through and through. Then it was digested with water and filtered, when a bright red iron ochre remained on the filter paper, which, after strong ignition weighed 18 parts. The reason for this procedure is easy to see. The sulphuric acid solution contains the new earth, together with iron, and the question is, how can they be separated from each other? This, I thought, could most conveniently be done by ignition, because vitriol loses its acid thus, and, by analogy, it was to be expected that the compound of the earth with sulphuric acid would remain undecomposed, which indeed occurred.

The filtered solution was slowly evaporated, and it appeared that the compound of the earth with sulphuric acid could crystallize into beautiful crystals, of which the most conspicuous were nearly half as large as raisin seeds. As the solution shrank, the crystals became finer and the form less easily distinguished, until the last looked just like a powder. After all the salt was dissolved in water again, the earth was precipitated with carbonated sal volatile, ignited and weighed. It was found to amount to 47½ parts . . . .

Properties of the Element

From the experiments which I have made with the earth, I will, to avoid diffuseness, omit those which agree with Prof. Gadolin's own, and merely state those which I regard as contributing to further description of the material.

All moistened and dissolved compounds of this earth with an acid have a very sweet taste, like solutions of lead, not so unpleasant but more sharp and astringent. Its compound with acetic acid is, in my opinion, fully as sweet as sugar of lead . . . .

I find nothing to hinder me from believing that the properties and characteristics of this earth are just as well defined as those of any hitherto known; as proof I will enumerate several especially striking reactions by which this substance can be distinguished from others. It is distinguished from barytes in that it gives a soluble salt with sulphuric acid, and can not be made to crystallize with nitric and muriatic acids. From lime by its crystals with suphuric and acetic acids. From magnesia in the same way, and from all three by this, that they are precipitated by caustic sal volatile. From alumina, in that it is not dissolved by

How Scotland's Mountains Arose

Will be described by Archibald Geikie, the famous Scotch geologist who was the first to explain the phenomena of faulting in rock strata

IN THE NEXT CLASSIC OF SCIENCE

caustic potash lye, and gives with acetic acid a salt stable in air. From silica, aside from its solubility in acids, because it can be dissolved again from the ignited carbonate in the wet as well as in the dry way . . . . Its reaction with carbonic acid differentiates it from zircon, not to mention its taste and the crystals of its neutral salt. It cannot be confused with strontia, which forms a most difficultly soluble compound with sulphuric acid, and one capable of crystalization with nitric and muriatic acids. Also it does not correspond especially with *Australerde*, which can be dissolved in no acid except muriatic, and in that not without boiling. It thus takes its proper and deserved place in the system of natural elements, as a simple and independent earth.

It must therefore be named, and it seems most fitting that it should be named from the place where it was first discovered, because neither the name of the discoverer nor that of the mineral are sufficiently short for forming a name for common speech. But it can be called Ytter-earth, in Latin Yttria, which is free from all ambiguity and confusion both in meaning and spelling. The mineral itself should no longer be called pitchstone, for that has an entirely different meaning, since substances dug up elsewhere are so named, but it should be called *Yttersteín*.

In regard to the opinions as to the use of the discovery of a new earth, I cannot quite agree with Prof. Gadolin, for Yttria has such clear and definite properties. By complicated and troublesome investigation it may be possible at another time to achieve much understanding and profit. Is baryta not indispensable now in manufacturing many substances, and necessary in analysis, and what need does it not fill in medicine! That Yttria, whose acid solutions have such a characteristic taste, may also find a use in medicine is perhaps not such an untruthful possibility.

What may be discovered through further research upon the nature of this earth and its behavior toward other bodies, I leave for the future to show.

Science News Letter, May 16, 1931

PHYSICS

Gap in Einstein Theory Filled By New View of Physics

A GREAT defect in the Einstein relativity theory, till now ignored, has just been illuminated in the Orient by Dr. William Band of the Yenching University, Peiping, China. Dr. Band's new theory will be announced in a communication in the next issue of the *Physical Review* of the American Physical Society.

The two great branches of modern theoretical physics, relativity and the new quantum mechanics of atoms, until now working independently, may be harmonized by Dr. Band's new system. At present either planets or atoms act in the same way, according to the relativity theory of Einstein. Actually the facts of atomic physics on which the quantum theory is built are in complete contradiction to this idea.

"Relativity," says Dr. Band, "requires an added postulate over and above the postulates made by Einstein at the foundation of the theory."

This additional assumption is that the events of which the world is composed occupy some space and time, and are not infinitely small "point-events" as required by Einstein.

Otherwise, stated Dr. Band:

"General relativity is logically unsatisfactory because it bases measurement on infinitesimals and absolute infinitesimals do not exist. In applying the relativity to experience, we have to decide arbitrarily what shall be small."

Actually the small scale structure of matter does not really allow this choice: electrons and atoms are things having perfectly definite size.

Dr. Band's daring attempt to solve this fundamental problem is based on the work of Prof. A. N. Whitehead, professor of philosophy at Harvard University. Prof. Whitehead, himself a mathematician, has devoted much thought to constructing a theory of nature that will include all branches of science within its scope. This is the first attempt to bring Whitehead's concepts into the form of a definite physical theory.

The speeding atoms, electrons and light waves, that are spoken of together in the language of atomic physics as "wave-particles" are still further transformed in the new scheme emanating from China. "Transmitted possibilities," Dr. Band calls them as if to emphasize the increasing immateriality of what was called the physical world.

In agreement with this Dr. Band finds that "the existence of the particle is by no means a necessity." In conclusion, he decides that "it is possible by recognizing a logical weakness of relativity to deduce from the most natural additional hypothesis to remove this weakness, the essential basis of the new quantum theory."

Science News Letter, May 16, 1931

MEDICINE

Reversed Blood Flow Relieves Gangrene

AN UNUSUAL case in which the flow of blood in a patient's hands and feet has been reversed for twenty years has just been reported to the American Medical Association by Dr. Bertram M. Bernheim of Baltimore.

The operation was performed to relieve gangrene which developed as a result of Raynaud's disease, an ailment affecting the smallest arteries and veins. When circulation in these is affected, as in Raynaud's disease, the tissues supplied by them do not get proper nourishment and die.

To correct this condition, Dr. Bernheim performed an operation linking an artery to a vein in the patient's left leg. The blood, which could not get down the diseased artery to the left foot and toes, was able to flow down the vein to the foot. Normally, of course, blood flows out from the heart in the arteries and back through the veins. This reversal of blood flow was successful in relieving the gangrene and pain of Raynaud's disease in the left foot. Later, when the other foot was attacked, and still later when the disease began to affect the hands, operations were performed to reverse the circulation in these members.

The patient, who was 26 years old at the time of the first operation, is now about 45 and in excellent health generally, Dr. Bernheim found on examination nearly 20 years after her last operation. However, pain has returned and gangrene set in again in the remaining toes of the feet and in one finger. The reason for this cannot be determined, nor can the final outcome of the case be predicted, Dr. Bernheim stated. The openings from arteries to veins in the arms appear still to exist and have probably prolonged the patient's life and health for many years.

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METEOROLOGY

Weather of Upper Air Studied With Airplanes and Balloons

Light Flashes From Tiny Gas Bag Devised by Canadian Meteorologist Report Temperature and Pressure

CHASING clouds in an airplane, to learn how fast they grow and to obtain other intimate secrets barred to earthbound weather men, is the new kind of meteorology that was described before the meeting of the American Meteorological Society in Washington, by Dr. J. B. Anderson of the Naval Air Station at Anacostia, D. C.

Dr. Anderson wanted to learn something about the birth and growth of clouds in the more or less permanent layer that hangs over the Pacific coast of the United States. He was especially curious to find out the rate at which they piled themselves up into the air. He found that to keep his plane even with the top of one cloud he was studying he had to climb two or three hundred feet in a minute.

How to get other weather data from the upper air without the expense of going up after it in an airplane was described by Dr. J. Patterson, of the Canadian Meteorological Service, Toronto. He has devised an apparatus that will flash back signals of temperature and pressure from an ascending small balloon as long as the observers can keep it in sight through a telescope.

Hitherto similar apparatus has been carried up arranged to record its experiences with a pen on a slowly moving strip of paper. But to get the story the weather man would have to wait until the balloon came down again and then depend on the chance of the apparatus being found and sent back by some farmer or woodsman. The new device is equipped with red and white electric lights fed by a flashlight battery. The mechanism is arranged in such a way that the order of flashing on and off of the lights will tell the observer on the ground whether the balloon is passing from warm air to cold or vice versa. Similarly, another light signals by its flashings how much the barometric pressure is changing as the balloon rises.

Dr. Patterson pointed out that this device should be especially useful to meteorologists in polar regions or other unpopulated parts of the world, where the ordinary registering instruments are useless through the impossibility of getting them back again.

Gravedigging, an occupation as far removed from airplanes and balloons as can well be imagined, can also be made to yield data of value to the meteorologist, Dr. C. L. Fassig of the U. S. Weather Bureau told his hearers. In making a study of how deep frost gets into the ground in winter, he had recourse to engineers and contractors, and also to those melancholy laborers who prepare for each of us his last house. The data thus gathered are expected to be of value to roadbuilders, construction firms and all whose business has to do with making holes in earth that may get frozen.

A vivid report of weather in a region where there is never any question whether the ground is frozen was made by Dr. W. C. Haines of the U. S. Weather Bureau, who was with Byrd in Antarctica. He told tales of taking observations in forty-mile blizzards, with frost so thick on the lens of his instrument that it had to be scraped off with a stick; of powdery snow driven

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in through minute crevices jamming the clockwork of automatic recording devices; of "freeze-proof" ink frozen solid until it was diluted with alcohol and glycerin. The lowest temperature experienced during the year in Little America was 72.4 degrees below zero Fahrenheit; the highest, 35 degrees above; an average for the whole year, 12.7 degrees below.

In spite of all these difficulties, however, the meteorological work was carried on successfully. Observations were taken daily at the base camp and on the over-ice expeditions. Over 400 sounding balloons were released and watched with instruments that made height and drift computations possible. Some of them were seen to ascend to as much as 30,000 feet. Kites and airplanes were used for capturing recorded data from aloft. A great mass of meteorologic data, the most complete ever compiled at "the bottom of the world" came back from Antarctica with the triumphant return of the Byrd expedition.

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ASTRONOMY

Astronomers to Study Meteors From Stations in Arizona

SHOOTING stars that flash in the night will be the subject of scientific attack by a Harvard College Observatory which will take the field in Arizona this fall. Special observing stations will be established near the site of the Lowell Observatory at Flagstaff, Ariz., and two astronomers will continually watch the sky through the nights in order to record for science the meteors that constantly bombard the earth's atmosphere from outer space. The actual observations will begin about October 1.

"One of the principal aims of the expedition is to determine the frequency of meteors throughout the year, and a second important aim is to determine their altitude in the earth's atmosphere," Dr. Harlow Shapley, director of the Harvard Observatory, declared. "In order to measure the height it will be necessary to work at two stations, separated by approximately twenty-five miles. At each station two observers will continually watch the sky throughout all the hours of darkness except when the weather and strong moonlight interfere. . . .

"In my opinion the meteors, which have been much too neglected by astronomers, are of high importance in problems of the upper atmosphere of the earth, the relation of meteors to comets, the nature and abundance of interstellar material, and in other problems of cosmic significance".

In addition to the naked eye observations of meteors for numbers and distribution through the night and throughout the year, and for height measurements, the astronomers will also attempt to determine the velocities of some of the meteors.

Meteors, or shooting stars, are small pebbles or dust grains speeding at twenty to thirty miles per second in the earth's atmosphere at an altitude of forty to eighty miles. Only those of great brightness are recorded on photographic plates and the human eye can see them nearly one hundred times fainter.

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PSYCHOLOGY

Pleasant Words are More Easily Remembered

AN ARGUMENT against so-called negative advertising in which unpleasant matters are warned against may be found in a report by Dr. Ross Stagner, of the psychological laboratory of Wisconsin University, made in Chicago last week to the meeting of the Midwestern Psychological Association.

Dr. Stagner has found that when a person tries to memorize a list of words, pleasant words are more easily remembered than either unpleasant words or those to which the person is indifferent. A possible explanation, he believes, lies in the fact that the individual has in his experience a greater number of associations with the pleasant words. Another explanation may be that, in spite of their instructions to give an equal amount of time to the study of each word, the subjects may have lingered longer over the ones they liked.

Science News Letter, May 16, 1931

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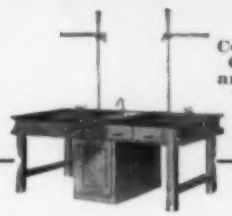

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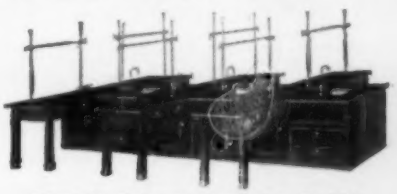

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OCEANOGRAPHY

Record Warm Weather Keeps Icebergs Off Atlantic Lanes

THE LABRADOR Current is weak this spring, and brings few icebergs. The warm Gulf Stream is taking advantage of this weakness to invade northern waters more deeply than usual.

These are among the first results of the exploratory trip of the U. S. Coast Guard vessel General Green, under the scientific direction of Dr. Olav Mosby, a young Norwegian oceanographer who is making a study of ice movements and their causes in the waters off Labrador and Newfoundland.

Only one berg has ben sighted so far, Dr. Mosby stated in a report to Science Service. This was picked up in latitude 47 degrees 2 minutes north, longitude 52 degrees 39 minutes west, and followed until it grounded, in latitude 46 degrees 36 minutes north, longitude 52 degrees 53 minutes west. Its drift was very slow and irregular, evidently mainly the work of winds and tide currents, indicating great weakness of the Labrador Current, the usual highway of icebergs.

Temperature reports from ships in the North Atlantic indicate unusually warm water for this time of year, and a notable extension of the Gulf Stream toward the north. Temperatures from 50 to 60 degrees Fahrenheit have been reported from the latitude of the Grand Banks. These are ten or twenty degrees higher than those of 1924, the "poorest" iceberg year so far on record, when the ocean temperature stood at about 40 degrees at the same latitude. In 1929, the "richest" iceberg year, the readings were from 40 down to 34 degrees. During 1929, 1,351 icebergs were sighted south of Newfoundland; 322 of them in April alone, as against a solitary one during the month just past.

The mildest winter on record is reported from Newfoundland. St. Johns harbor, usually frozen from late December until March, was ice-free this year, and no pack-ice drifted down from the North. Atlantic salmon were offered in the St. Johns market in January and February; these fish are not usually caught until May or June.

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The American Malacological Union was formally organized at a meeting of workers in mollusks held in the Academy of Natural Sciences in Philadelphia, Pa. The object of the Union is the promotion of the science of malacology by holding meetings for the reading and discussion of papers, and for furthering the interests of students and collectors of shells by facilitating acquaintance and cooperation between members. Membership is open to residents of North and South America, Cuba, and Hawaii.

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BOTANY

Nature Ramblings

By FRANK THONE

Anemone

"WINDFLOWER," the anemone has been called, and it is a really appropriate name. For all the species of this genus don't mind being pulled at by the breezes, and some of them grow boldly on the open hillsides of the prairies, where the skies of April and May are more often open-windowed than not. Whoever has seen a mass of these flowers, blue or white, tossing in the wind will grant that they have been very well named.

It is frequently stated that the name Anemone is a corruption of the Greek *pneumos,* meaning breath or wind, but this is not the case. According to Gray's Manual, the standard botanical authority, it is an attempt at the latinization of Na'man, which is the Semitic name for Adonis. Adonis was a mortal youth who died tragically because of his love for the goddess Venus, and from his blood the crimson-splashed anemone of the Orient is said to have sprung.

Anemones are widely scattered, all around the world, but mostly in the lands where the wind blows free. Our most abundant species is a foot- or two-foot-high, rough-leaved, white-flowered plant that grows in great masses in rich, moist soil. It is frequently found forming long swathes along the foot of a railroad right-of-way. Then there is a smaller, more delicate, enamel-blue-flowered anemone, that grows in the woods and is in bloom at the present moment. A third kind, one of the oddest of all anemones, has gained the nickname of "old man's whiskers" because of the long, silky mass of hairs that surrounds the ripening fruits after the flower has faded.

Science News Letter, May 16, 1931

PSYCHOLOGY

Strict Time Not Followed By Skilled Pianists

THAT A PIANIST, though he is an excellent musician, does not play in strict time even when he tries to do so, is one of the interesting facts disclosed by a piano camera described in Chicago at a meeting of the Midwestern Psychological Association by Miss Laila Skinner. of the University of Iowa.

The instrument gives a record, which may be preserved and studied, of the exact time at which each note is struck, the time it is released, its intensity, and also the movements of the pedal.

Miss Skinner found that each of the pianists that she observed by means of this device gave a characteristic interpretation of any particular piece. When he repeated, the second rendition would be strikingly like the first.

The variations in time were shown when the artists tried to play in time with a metronome's even beats. The deviations from exact time were smaller than in the artistic rendition, but were in the same direction.

It was also found that the artist does not strike all the notes of a chord at the same instant; the amount of time between the first and last note ranges from .01 to .37 seconds.

Science News Letter, May 16, 1931

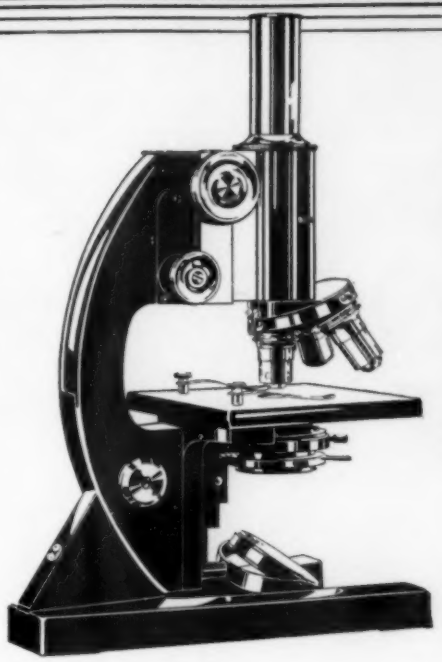
MEDICINE

Incurable Tropical Disease Yielding To Science

A REPORT indicating that a cure has probably been found for a hitherto incurable tropical disease known as coastal erysipelas has just been received at the department of tropical medicine, Harvard University Medical School, Boston. The report is from Prof. Richard P. Strong of Harvard who has been in Guatemala for the past two months studying the disease which has the scientific name *Onchocerca caecutiens*. His report states he has found that plasmoquine in dilutions up to one to ten thousand effectively destroys the worm causing the disease when the worm is in the larval state in the blood.

The disease Prof. Strong has been studying is very prevalent in Central and South America. The worm causing it is transmitted by gnats. The disease produces swellings or nodules under the skin and also causes blindness.

Science News Letter, May 16, 1931



To Those Who Know Microscopes

The GS is a laboratory microscope built to provide a maximum of balance, stability, and sturdiness. Optically it is the same as other B & L laboratory microscopes. The stand makes this instrument the personal preference of many who prefer a somewhat heavier, more rugged microscope.

Like all truly efficient mechanisms, its beauty and grace proclaim its balance and precision. The arm sweeps down in a long arc to join the base at the point that allows the instrument to be in proper balance at any angle of inclination between the vertical and horizontal. The long and heavy V-shaped base gives unusual stability.

Write for literature that will bring you complete details about the GS.

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• First Glances at New Books

Philosophy

THE LOGIC OF SCIENCE—Harold R. Smart—*Appleton,* 237 p., $2.50. The business of accumulating scientific facts has of late become so easy and so fascinating that we are all apt to become like children gathering bright pebbles in a brook. It must not be forgotten, however, that data are only the raw materials of science, and that hard, continuous thinking—which has to be done "by hand"; no shining laboratory apparatus can help—is the cement needed to fasten all these *disjuncta* together and make a really finished job. Books like Dr. Smart's are inducements to enter upon this more difficult path and helps in travelling it.

Science News Letter, May 16, 1931

Public Health

FACTS AND FIGURES ABOUT TUBERCULOSIS—Jessamine S. Whitney—*National Tuberculosis Association,* 63 p., 75c in paper cover, $1 in flexible fabricoid. This book is the answer to the question, "Please send me all statistics on tuberculosis." It will be useful to various workers in the field of tuberculosis and may have some interest for tuberculous patients or their friends with a taste for figures.

Science News Letter, May 16, 1931

Mathematics

ELEMENTS OF ANALYTIC GEOMETRY—Clyde L. Love—*Macmillan,* 149 p., $1.60. An abridgement of the author's "Analytic Geometry" for short courses in college and university. The straight line, the circle, conic sections, and solid geometry are all well treated.

Science News Letter, May 16, 1931

Child Hygiene

WHITE HOUSE CONFERENCE, 1930—*Century,* 356 p. The addresses and abstracts of the committee reports of the White House Conference on Child Health and Protection called by President Herbert Hoover have been collected in this volume, together with names of committee members and chairmen. Of interest to workers in the broad field of child health and welfare.

Science News Letter, May 16, 1931

Botany

TAXONOMY OF THE FLOWERING PLANTS—A. M. Johnson—*Century,* 864 p., $7.50. Prof. Johnson makes a noteworthy contribution to the bookshelf of the botanist who is trying to teach his students something really solid about the classification of plants, for besides thorough-going discussions of the principles underlying taxonomy he offers penetrating descriptions of the principal groups, illustrated with hundreds of excellent pen drawings made by himself, together with useful hints for field work. There is a fairly full glossary and a very well-chosen bibliography.

Science News Letter, May 16, 1931

History

THE VINLAND VOYAGES—Matthias Thordarson, translated by Thorstina Jackson Walters—*Amer. Geographical Society,* 76 p., $2. The effort to interpret the writings that tell about the Norse voyages to America has been going on for a long time. In this small book by the director of the National Museum of Iceland, the events of the voyages are rehearsed and most of the really plausible theories and explanations are discussed.

Science News Letter, May 16, 1931

Physics

BRIEF COURSE IN PHYSICS—Chas. H. Lake and George P. Unseld—*Heath,* 468 p., $1.68. A very attractive high school text that attempts to establish the essential scientific laws before diverting the pupil with a wealth of applications. The author has had in mind the usual difficulties of college teachers: haziness as to the meaning of fundamental terms and lack of facility in simple mathematical manipulation. The text has been read and criticised by Dr. K. T. Compton, president of the Massachusetts Institute of Technology, and Dr. W. R. Whitney, director of the General Electric research laboratory in Schenectady. It should be admirable for students embarking on a scientific career. The book is well illustrated.

Science News Letter, May 16, 1931

Photography

APPLIED PHOTOGRAPHY, *Eastman Kodak Company,* Vol. 1, No. 1, May, 1931, 50c. An inspiring magazine that presents the best current uses of photography in business and industry. This first number contains nearly thirty excellent reproductions of such subjects as tractors, railway equipment, musical instruments, anesthetics and arc welding. The publishers plan to issue the magazine every second month at the start.

Science News Letter, May 16, 1931

General Discussion

THE INTERNATIONAL FORUM, Vol. 1, No. 1, Published at Berlin-Charlottenburg, Konigin-Luise-Strasse 12, 20c. The first issue of a new monthly periodical, for the exposition of German, American and British ideas, written in English. Quoting from the editorial: "What we require in the mêlée of our woes and worries is a little calm and sound and serious thinking on the part of people who devote themselves to it for its own sake and not for the sake of furthering some contingent interest." Contributors to the first issue include Max Planck, founder of the quantum theory, Erwin Schroedinger of the new quantum mechanics, Arnold Zweig and John Galsworthy. For succeeding issues Thomas Mann, H. N. Thomlinson, Gerhardt Hauptmann, Hermann Weyl, Wolfgang Kohler and John Drinkwater promise contributions. Einstein, Shaw, James Stephens, Sean O'Casey and Lion Feuchtwanger are also associated with the venture. From such a cast something significant can be confidently expected. Planck's article in the present issue is particularly interesting.

Science News Letter, May 16, 1931

Geophysics

THE FIGURE OF THE EARTH—*National Research Council,* 286 p., $3.50. Leading men in several branches of geophysics have prepared this monograph, which constitutes Bulletin No. 81 of the National Research Council. Tidal theory and computations, earth tides, isostasy, the size and shape of the earth, determination of "g", the determination of elevations and geographic positions, and the variation of latitude are among the problems dealt with.

Science News Letter, May 16, 1931

Travel

JUNGLE WAYS—William B. Seabrook—*Harcourt, Brace,* 308 p., $3.50. As in his book "The Magic Island" the author concentrates upon strange and fantastic aspects of native life. This time Africa is the scene, and Mr. Seabrook introduces us to the Gueré cannibals, with whom he lived for some months, also to the sorcery and magic of the jungle, and the little-known cliff dwellers who live east of Timbuctoo. It is all very dramatically and entertainingly told.

Science News Letter, May 16, 1931